

RESPONSE TO NOTICE OF ALLOWANCE

Serial No. 10/017,039

Page 2 of 5

IN THE CLAIMS

1. (Previously Presented) A method of plasma etching a layer of a dielectric material having a dielectric constant that is greater than 4, comprising:

exposing the layer to a plasma comprising carbon monoxide and a halogen containing gas, wherein the dielectric material is at least one of HfO_2 , ZrO_2 , Al_2O_3 , ZrSiO_2 , HfSiO_2 , and TaO_2 .

2. (Cancelled)

3. (Previously Amended) A method of plasma etching a layer of a dielectric material, comprising:

exposing a layer of HfO_2 to a plasma comprising carbon monoxide and a halogen containing gas.

4. (Original) The method of claim 1 wherein the halogen containing gas comprises a chlorine containing gas.

5. (Cancelled)

6. (Previously Presented) The method of claim 1 wherein halogen gas comprises chlorine.

7. (Original) The method of claim 4 wherein said chlorine containing gas is Cl_2 .

8. (Original) The method of claim 6 wherein said exposing step further comprises the step of:

supplying 20 to 300 sccm of Cl_2 and 2 to 200 sccm of CO.

RESPONSE TO NOTICE OF ALLOWANCE

Serial No. 10/017,039

Page 3 of 5

9. (Original) The method of claim 1 further comprising the step of:
maintaining a gas pressure of between 2-100 mTorr.
10. (Original) The method of claim 6 further comprising the step of:
maintaining a gas pressure of 4 mTorr.
11. (Original) The method of claim 1 further comprising the step of:
applying a bias power to a cathode electrode of 5 to 100 W.
12. (Original) The method of claim 6 further comprising the step of:
applying a bias power to a cathode electrode of 20 W.
13. (Original) The method of claim 1 further comprising the step of:
applying an inductive source power to an inductively coupled antenna of 200 to 2500 W.
14. (Original) The method of claim 6 further comprising the step of:
applying an inductive source power to an inductively coupled antenna of 1100 W.
15. (Previously Presented) The method of claim 3 further comprising the step of:
maintaining a workpiece containing the layer of HfO_2 at a temperature between 100 to 500 degrees Celsius.
16. (Previously Presented) The method of claim 3 further comprising the step of:
maintaining a workpiece containing the layer of HfO_2 at a temperature of 350 degrees Celsius.
17. (Currently Amended) A method for plasma etching a workpiece having a layer of hafnium-oxide comprising the steps of:

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RESPONSE TO NOTICE OF ALLOWANCE

Serial No. 10/017,039

Pag 4 of 5

supplying between 20 to 300 sccm of chlorine and between 2 to 200 sccm of carbon monoxide;

maintaining a gas pressure of between 2-100 mTorr;

applying a bias power to a cathode electrode of between 5 to 100 W;

applying power to an inductively coupled antenna of between 200 to 2500 W to produce a plasma containing said chlorine gas and said carbon monoxide gas; and

maintaining said workpiece at a temperature between 100 and 500 degrees Celsius.

18-34. (Cancelled)

35. (Previously Presented) The method of claim 3 wherein the halogen containing gas is chlorine.

36. (Previously Presented) The method of claim 3 wherein the halogen containing gas is hydrogen chloride.